Initially, applicants note that the Examiner states that the applicants are "attacking the references individually...and attacking the references based upon what is not taught by the reference and does not specifically argue against that which the reference is used to teach." (See page 2, paragraph 3). Applicants respectfully disagree since applicants indicated with respect to specific teachings how each secondary reference does not make up for the shortcomings of the primary reference Marissal and argued specifically against that which the Examiner used each secondary reference to teach.

Claim 3 is the sole independent claim in the application. Claim 3 claims a submersible shellfish farm comprising at least one line of cables bearing spaced culture ropes. The at least one line is suspended horizontally from two end floats which support the at least one line in association with intermediate support buoys and is further anchored by concrete dead weights positioned at each end of the at least one line. The at least one line of cables is submersible and is elevated from a sea floor while guided by vertical movement of the two end floats when the two end floats are submerged. The two end floats are submerged or raised based on inner volume of the floats being variable by filling or draining of the inner volume of water or air and the end floats are connected to a surface

buoy including an air intake valve. The two end floats are connected to the concrete dead weights by an anchoring system which maintains tension on the at least one line of cables. Dependent claim 4 further defines the anchoring system as comprising at least one end buoy submerged and arranged to use uplift thrust of the end buoy to pull each of the end floats to which are connected the tensioning cables and pulleys fixed to the dead weights. Accordingly, applicants' claims are directed to a submersible shellfish farm including a system of soft stabilization involving cables that include end floats of variable buoyancy arranged on both sides of a line of buoys and which support the line in tension to absorb the weight from the growth of the shellfish on the culture ropes, as well as sudden movements of the sea (e.g., from storms) in which the farm is anchored. The art applied by the Examiner does not teach or suggest an anchoring system which maintains line tension by end or tensioning buoys, denoted as 13 in the sole figure, which are arranged so that their uplift thrust pulls at each end float 1 by tensioning cables 11. End buoys 13 pull ahead of end floats 1 to maintain the tension in the line which absorbs the increase in weight of the shellfish. Thus, end floats 1 and end buoys 13 combine to provide soft stabilization and support to the tension in the cables. The applied art does not teach or suggest applicants' claimed

structure.

Marissal teaches a device for growing mollusks, in particular oysters, which incorporates at least one element constituting a tray (30) for carrying the mollusks that is disposed within a net (24) of tubular shape and adapted to be suspended from a hawser anchored in the sea. The tray element (30) includes on its periphery a flange (42) extending generally in a direction perpendicular to the plane of the tray. The tray further includes a separate clamping element (32) for clamping the net against the flange (42).

Marissal, accordingly, teaches a different structure from applicants' structure as claimed. In particular, among other things but as acknowledged by the Examiner, Marissal does not disclose (1) concrete dead weights, (2) two end floats being submerged or raised based on inner volume of the floats being variable and being connected to a surface buoy including an air intake valve, and (3) the use of an anchoring system as claimed. However, the Examiner relies on Byle, Streichenberger and Zemach in combination with Marissal to reject claims 3 and 4 under 35 U.S.C. § 103.

Byle teaches a floating offshore structure having a buoyant hull with sufficient fixed ballast to place the center of gravity of the floating structure below the center

of the buoyancy of the hull. A support structure coupled to an upper end of the hull supports and elevates the superstructure above the water surface. A soft tendon is attached between the hull and the sea floor. The vertical stiffness of the soft tendon results in the floating structure having a heavy natural period of at least twenty seconds. The Examiner relies on Byle for the isolated teaching that with respect to solid fixed ballast, concrete is an equivalent structure to pig iron. Byle is not relied on for any other teaching and applicants submit that Byle does not make up for any of the shortcomings of Marissal as acknowledged by the Examiner and set forth above. Byle does not disclose fixed ballast of concrete or pig iron in a submersible farm structure as claimed, or two end floats being submerged or raised based on inner volume of the floats being variable and being connected to a surface buoy including an air intake valve, or the use of an anchoring system as claimed. Neither Marissal nor Byle suggest any motivation to modify the teachings of Marissal or Byle in order to provide the claimed shellfish farm. Accordingly, even assuming for the sake of argument that Byle teaches that concrete is equivalent to pig iron, such teaching does not make up for the other deficiencies of Marissal. The other secondary references also do not make up for the deficiencies of Marissal as set forth below.

Streichenberger teaches a method and device for practicing aquiculture in the open sea which includes a bow net means of rigid construction having means permitting it to float in a partially submerged condition or fully immersed in the water without touching the bottom of the sea. The bow net means includes constant-buoyancy tanks and variable-buoyancy tanks, the latter being adapted to be filled with either air or water in order to control the submersion level of the bow net. The Examiner relies on Streichenberger for the isolated teaching of floats (31) being submerged and raised based on an inner volume of the float being variable and being connected to a surface buoy (7) including an air intake valve for adjusting the depth of the aquatic device dependent upon the expected weather conditions. Streichenberger is not relied on for making up for all of the shortcomings of Marissal as set forth above. Streichenberger does not disclose concrete dead weights or an anchoring system as claimed. Accordingly, even for the sake of argument the teaching as asserted by the Examiner was agreed to such would be inadequate to render the claimed structure obvious within the meaning of 35 U.S.C. § 103. Further, applicants respectfully submit that it would not have been obvious to one of ordinary skill in the art to use the variable depth floats as taught by Streichenberger with the device of Marissal in order to provide a device which

can be lowered in the water to minimize damage to the structure during rough weather. The hanging trays of Marissal disposed in tubular netting or lanterns are taught for submersion in the water from a hawser. Thus, the oysters being cultured are contained in closed spaces (see Col. 4, lines 44-45) which protect the oysters. No need is recognized in Marissal for adjusting the submersion level of the culturing containers based on weather since the oysters are in an enclosed area and will not be lost even if jarred loose in response to rough weather. Accordingly, it would not have been obvious to one skilled in the art to use the variable depth floats as taught by Streichenberger with the device of Marissal to provide the claimed shellfish farm without knowledge of applicants' invention. Neither Marissal nor Streichenberger suggest any motivation to modify the teachings of Marissal or Streichenberger in order to provide the claimed shellfish farm.

Zemach is relied on by the Examiner for the prior art teaching shown in Figures 1A and 1B and described at Col. 2, lines 6-29. The prior art described teaches a fish cage and mooring system. The mooring system includes a large mooring anchor 11 through which a cable 12 is led to a crown buoy 14 and second mooring anchor 16. Tension is maintained on cable 12 by the buoyancy of crown buoy 14 to control the submersion of the fish cage. The buoyancy of

buoy 14 is controlled by the amount of water contained in two chambers of the buoy. Zemach states that this system is not desirable due to the large permanent mooring anchors and thus goes on to teach a fish cage and cables having a combined buoyancy which is such that at least a portion of the fish cage is normally located at or above the water surface. The cables are connected to a sinker whose weight is sufficient to overcome the combined buoyancy of the fish cage cables. The sinker is also connected to a second cable which is connected to a buoy which contains a winch for alternately shortening and lengthening the effective length of the second cable so as to alternately allow the fish cage to float or to submerge. The Examiner relies on Zemach to teach the use of an anchoring system including dead weights for maintaining tension on a cable when a fish cage is lowered in the water during rough weather. Zemach, however, does not make up for all the shortcomings of Marissal as set forth above or the shortcomings of the other secondary references as also set forth above. In particular, Zemach does not disclose two end floats being submerged or raised based on inner volume of the floats being variable and being connected to a surface buoy including an air intake valve as claimed. Zemach teaches away from the prior art device including permanent mooring anchors and, thus, one skilled in the art would not be motivated to make the combination as

applied by the Examiner in absence of further teaching or suggestion to take isolated features from multiple references and combine them so as to achieve applicants' claimed structure.

Accordingly, none of the applied references, alone or in combination teach a submersible farm as claimed, in particular as including an anchoring system as claimed which provides a system of soft stabilization of a line of cables including end floats of variable buoyancy arranged on both sides of a line of buoys to maintain tension on the line thereby absorbing increased weight upon growth of the shellfish in the farm, as well as any sudden movements of the sea. The raising and lowering of the line of cables is guided by the vertical displacement of the end floats 1 as a consequence of their inner volume being filled or drained through the surface buoy 9. The anchoring system maintains the line tension by means of the end buoy 13 arranged so as to use the uplift thrust to pull at each of the end floats 1 by tensioning cables 11. The end buoy 13 pulls ahead of the end floats 1 to maintain the tension in the line that absorbs the increase of weight of the shellfish. Both the end floats 1 and the end buoys 13 are combined to achieve a soft stabilization and to support the tension in the line of cables.

Applicants respectfully submit that it would not

have been obvious to one of ordinary skill in the art to use the prior art anchoring system described in Zemach with the device of Marissal as modified by Streichenberger. It would not have been obvious to one of ordinary skill in the art in view of Marissal, Byle, Streichenberger and Zemach.

As such, the combination of Byle, Streichenberger and Zemach does not make up for the shortcomings of Marissal as set forth above. No teaching or suggestion is provided by the applied art to motivate one of ordinary skill in the art to combine isolated portions of Marissal, Byle, Streichenberger and Zemach in order to provide the shellfish farm as claimed as required under 35 U.S.C. § 103(a).

The rejection of the Examiner makes it clear that the Examiner is selecting select parts of the prior art disclosures based on applicants' own teaching. This is using improper hindsight. Thus, as the Court of Appeals for the Federal Circuit stated in In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998):

> "As this court has stated, "virtually all [inventions] are combinations of old elements." *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 698, 218 USPQ 865, 870 (Fed. Cir. 1983); *see also Richdel, Inc. v. Sunspool Corp.*, 714 F.2d 1573, 1579-80, 219 USPQ 8, 12 (Fed. Cir. 1983) ("Most, if not all, inventions are combinations and mostly of old elements."). Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of

> each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be "an illogical and inappropriate process by which to determine patentability." *Sensonics. Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570, 38 USPQ2d 1551, 1554 (Fed. Cir. 1996).
>
> To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed."

In the case at hand, there is no motivation to select the parts of the multiple individual references selected by the Examiner and combine such as to provide the claimed submersible farm for the reasons stated above. Applicants respectfully request withdrawal of the § 103 rejection.

Reconsideration and allowance of the application is requested.

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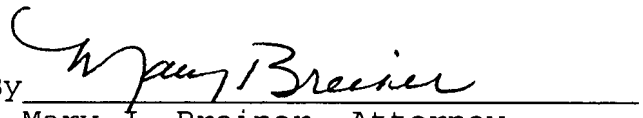
Respectfully submitted,

ANDRES QUINTA CORTIÑAS ET AL

By 

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